

- 36 -

Abstract

Forms of differentially acting glycoprotein hormones are disclosed. These compositions are of the formula

- 5 $\beta^1-(\text{linker}^1)_m-\alpha-(\text{linker}^2)_n-\beta^2$ (1);
 $\beta^1-(\text{linker}^1)_m-\beta^2-(\text{linker}^2)_n-\alpha$ (2);
 $\alpha-(\text{linker}^1)_m-\beta^1-(\text{linker}^2)_n-\beta^2$ (3);
 $\beta^2 \approx \alpha-(\text{linker})_m-\beta^1$ (4); or
 $\beta^1-(\text{linker})_m-\alpha \approx \beta^2$ (5)

- 10 wherein each of β^1 and β^2 has the amino acid sequence of the β subunit of a vertebrate glycoprotein hormone or a variant of said amino acid sequence, as variants are defined herein. " α " designates the α subunit of a vertebrate glycoprotein hormone or a variant thereof; "linker" refers to a covalently linked moiety that spaces the β^1 and β^2 subunits at appropriate distances from the α subunit and from each other. " \approx " is a
15 noncovalent link. Each of m and n is independently 0 or 1.